

REMARKS

In the previous Office Action, the Applicants amended the original independent claims to put them in condition for allowance. In addition, Applicants submitted three new claims (40 to 42). These are the only claims currently at issue.

Claim 40 relates to a laser system having a master oscillator and a power amplifier (MOPA). As illustrated in Figure 10(a) and 10(b) and discussed in the specification beginning at page 12, line 6, this laser system includes at least one beam steering element located between the master oscillator and the power amplifier. In addition, a position sensor (1006) is provided for monitoring the propagation direction of the beam. Signals generated by the position sensor are fed back to the beam steering system to optimize the direction of the beam before it enters the power amplifier. As noted in the specification, at page 12, line 14:

Placing the AO deflector between the MO and PA can be advantageous, as transmission losses of the AO deflector can be recovered in the amplifier stage. Also, such placement allows the AO deflector to be exposed to a relatively low-power laser beam, which can be important for extending the lifetime of deflector. Placing an AO deflector in the output path of the amplified beam would cause significant damage to the deflector cell.

In the Office Action, the Examiner rejected claim 41 for failing to provide antecedent basis for the term “the optical element.” Applicants have amended claims 41 and 42 to correct the dependencies to claim 40 and 41 respectively. Claim 40 recites the optical element and provides support for claim 41.

In the Office Action, the Examiner rejected claim 40 as being anticipated by Lublin (6,704,339). As correctly noted by the Examiner, Lublin discloses a laser system with a master oscillator 8 and a power amplifier 10. Light from the oscillator passes through a “MO WEB 24” and “PA WEB 26” before entering the amplifier. Elements 24 and 26 provide wavefront correction and also include “alignment components for precisely directing the output beam” from the oscillator into the amplifier (column 7, line 3).

The Lublin system also includes a **separate** beam pointing control system. More specifically, the Lublin system includes a beam analysis module (BAM 38) which has “sensors that measure beam pointing and position errors.” (column 9, line 63). Error signals from the BAM 38 are fed back to beam steering mirrors 40a and 40b (column 9, line 53 to column 10, line 15). It should be noted that the beam steering mirrors 40a and 40b in Lublin are located in

the beam delivery unit 6 which is **downstream** from both the oscillator and amplifier. The error signals in Lublin are **not supplied** to either the MO WEB 24 or the PA WEB 26. Presumably, the beam alignment components in the MO WEB 24 and the PA WEB 26 are adjusted during the initial set up of the laser. However, during use, any pointing errors are **only** corrected after the beam has passed through the amplifier.

In contrast, and as recited in claim 40, Applicants' device is arranged so the beam pointing error signals are supplied to beam steering optics located **between** the oscillator and the power amplifier. As noted above, this arrangement allows for transmission losses to be recovered and can reduce damage to the beam steering components. It is respectfully submitted that the patent to Lublin, which discloses a laser system where the corrections to the propagation direction of the beam are made **after the beam exits the power amplifier**, fails to teach or suggest Applicants' invention which requires that the pointing errors be corrected **between** the oscillator and the amplifier. For these reasons, it is respectfully submitted that claim 40 defines patentable subject matter and allowance thereof, along with the claims depending therefrom, is respectfully solicited.

Respectfully submitted,

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